

CLAIMS

I claim.

1. A miniature, unmanned aircraft having

a fuselage, a wing fixed to said fuselage, a reciprocating piston internal combustion engine supported on said aircraft, a propeller drivably connected to said engine, control surfaces operably attached to said aircraft and a servomechanism operably connected to each said control surface, a microprocessor carried aboard said aircraft, for managing flight control, a radio frequency receiver carried aboard said aircraft and connected to said microprocessor, and a data handling apparatus carried aboard said aircraft; and

an electrical power supply system for supplying electrical power to said microprocessor, said radio frequency receiver, said data handling apparatus, and each said servomechanism, comprising a generator carried aboard said aircraft and driven by said engine, having an electrical output, and a battery pack having battery

terminals, and electrical conductors disposed to electrically connect said microprocessor, said radio frequency receiver, said data handling apparatus, and each said servomechanism to said output of said generator and also to said battery terminals, wherein gross weight of said aircraft is limited to fifty-five pounds.

2. The miniature, unmanned aircraft according to claim 1, wherein said data handling apparatus is a data transmitter disposed to transmit digitized data.

3. The miniature, unmanned aircraft according to claim 1, wherein said data handling apparatus is a data acquisition device disposed to acquire environmental data.

4. The miniature, unmanned aircraft according to claim 1, wherein said data handling apparatus is a flight data acquisition device disposed to sense data relating to at least one of aircraft altitude and aircraft attitude.

5. The miniature, unmanned aircraft according to claim 1, further including a GPS receiver communicably connected to said microprocessor.

6. The miniature, unmanned aircraft according to claim 1, further including a radio frequency transmitter communicably connected to said microprocessor.

7. The miniature, unmanned aircraft according to claim 1, further including at least one voltage reducing device for adjusting generator output voltage to a predetermined lower voltage for operating at least one of said microprocessor, said radio frequency receiver, said data handling apparatus, and said servomechanism at a voltage lower than that output by said generator, wherein said voltage reducing device is interposed between any one component of a first group of power supplying components including said battery pack and said generator and at least one component of a second group of power consuming components including said microprocessor, said radio frequency receiver, said data handling apparatus, and said servomechanism.

8. The miniature, unmanned aircraft according to claim 1, further including at least one noise filter connected to one of said conductors in a manner protecting at least one of said microprocessor, said radio frequency receiver, said data handling apparatus, and a said servomechanism from line noise.

9. A miniature, unmanned aircraft having

a fuselage, a wing fixed to said fuselage, a reciprocating piston internal combustion engine supported on said aircraft, a propeller drivably connected to said engine, control surfaces operably attached to said aircraft and a servomechanism operably connected to each said control surface, a microprocessor carried aboard said aircraft, for managing flight control, and a radio frequency receiver carried aboard said aircraft and connected to said microprocessor;

a data handling module including a data handling apparatus disposed to receive data, a housing which is manually removably attached to said aircraft and which is disposed to substantially enclose said data handling apparatus, and manual fasteners for removably attaching said housing to one of said fuselage and said wing; and

an electrical power supply system for supplying electrical power to at least said microprocessor, said radio frequency receiver, said data handling apparatus, and each said servomechanism, comprising a generator

carried aboard said aircraft and driven by said engine, having an electrical output, and a battery pack having battery terminals, and electrical conductors disposed to electrically connect said microprocessor, said radio frequency receiver, said data handling apparatus, and each said servomechanism to said output of said generator and also to said battery terminals.

10. The miniature, unmanned aircraft according to claim 9, wherein said data handling apparatus is a data transmitter disposed to transmit digitized data.

11. The miniature, unmanned aircraft according to claim 9, wherein said data handling apparatus is a data acquisition device disposed to acquire environmental data.

12. The miniature, unmanned aircraft according to claim 9, wherein said data handling apparatus is a flight data acquisition device disposed to sense data relating to at least one of aircraft altitude and aircraft attitude.

13. The miniature, unmanned aircraft according to claim 9, further including a CPS receiver communicably connected to said microprocessor.

14. The miniature, unmanned aircraft according to claim 9, further including a radio frequency transmitter communicably connected to said microprocessor.

15. The miniature, unmanned aircraft according to claim 9, further including at least one voltage reducing device for adjusting generator output voltage to a lower voltage for operating at least one of said microprocessor, said radio frequency receiver, said data handling apparatus, and said servomechanism at a voltage lower than that output by said generator, wherein said voltage reducing device is interposed between any one component of a first group of power supplying components including said battery pack and said generator and at least one component of a second group of power consuming components including said microprocessor, said radio frequency receiver, said data handling apparatus, and said servomechanism.

16. The miniature, unmanned aircraft according to claim 9, further including at least one noise filter connected to one of said conductors in a manner protecting at least one of said microprocessor, said radio frequency receiver, said data handling apparatus, and a said servomechanism from line noise.